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XXIV.—TURRET CLOCKS.

The following Letter has been received from Mr. W. WYNN, respecting certain improvements made by him in TURRET CLOCKS, for which he has at different times been rewarded by the Society.

Dean-street, Soho-square,

SIR;

April 17, 1827.

As I conceive that the Society of Arts will feel as much pleasure to hear of, as I have to relate, the success of the application of those improvements for which they have honoured me with their rewards, I beg to hand you a rate of going of a church clock which I have lately made and fixed in the splendid old church of Boston, Lincolnshire, in which, among many other improvements, I have introduced the escapement for which they awarded me their gold Isis medal, and twenty guineas, in 1817.

Rate of variation from

1826.—Nov. 16 to Nov. 20, $+27''$, being 4 days, at $+6''.75$ per day.

20 to 26, $+35''$, being 6 days, at $+5''.83$ per day.

26 to Dec. 2, $+43''\frac{1}{2}$, being 6 days, at $+7''.25$ per day.

Dec. 2 to 3, $+7''$, being 1 day, at $+7''$ per day.

During the above series I was with the clock, having other work to execute in the town, and continually had to be opening the case to show the machinery; yet, notwithstanding this frequent disturbance, the daily error of the above rate was only $7''.25 - 5''.83 = 1''.42$, or less than a second and a half per day. The pendulum has since been altered, to correct the gaining, and the following has since been the rate of the clock.

Rate of variation from

1827.—Jan. 30 to Feb. 3, — 1", being 4 days, at —0".25 per day.
Feb. 3 to 22, —13", being 19 days, at —0".684 per day.
22 to Mar. 5, + 2", being 11 days, at +0".18 per day.
Mar. 5 to 22, + 1", being 17 days, at +0".06 per day.

In this last series of fifty-one days, the daily error has, therefore, been $0''.684 + 0''.18 = 0''.864$, or very little more than three quarters of a second.

The accuracy of this rate has prevented the necessity of altering the time of the clock since it was first put going from regulation, and will do so for a long time to come, which is an object of much importance; for an alteration in a public clock, although it be made to correct it, is liable to mislead those persons who are guided by it.

So much is the friction taken off in this piece of work, that the watch part, which goes eight days, whose great wheel is fifteen inches diameter, is keeping up a motion of a two seconds' pendulum, weighing 132 lbs. with a maintaining power of 15 lbs. 9 oz. which is not more than a tenth of the weight usually employed in clocks of these dimensions. And I wish to add, that it does not only keep it going, but that it goes well; for the length of the chord of the arc of vibration is twenty-four inches, while that of the angle of escapement is only 9.6 inches. This reduction of the weight of the maintaining power has not only tended to produce the accuracy of rate, but it will be the means of greatly prolonging the duration of the watch part.

I am also much gratified to state that the hammers for which the Society honoured me with another reward of twenty guineas in 1822, most fully answer my expectations. I have attached a set of them to the clock in question, the powers of which are so ample, that they produce sounds from the bells sufficiently loud to be heard in every house in the large town of Boston, which

contains twelve thousand inhabitants, an object which was never accomplished before by an eight-day clock. I have also, by the application of my toothed sectors, as described in your 40th volume, and by executing the trains on genuine geometrical principles, been able to lift these hammers with weights from fifty to seventy per cent lighter than is applied to several specimens of work executed by my contemporaries, as compared with the momenta of the hammers and of the weights severally applied—an object of great importance, as it is generally acknowledged, that to be enabled to lift the hammers of an eight-day clock sufficiently heavy to bring out the tones of the large bells of a church, it would be necessary to employ such heavy weights as to risk the crushing of the machinery in a few years.

I beg to say that the above is a statement of facts which may be most unequivocally authenticated.

I am, Sir,

A. Aikin, Esq.

&c. &c. &c.

Secretary, &c. &c.

W. WYNN.